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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/815,665	03/23/2001	Thomas Barrow	1-15313	6008

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Donald A. Schurr
Marshall & Melhorn, LLC
8th Floor
Four SeaGate
Toledo, OH 43604

EXAMINER
DERRINGTON, JAMES H

ART UNIT	PAPER NUMBER
1731	6

DATE MAILED: 01/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/815,665	Applicant(s) BARROW ET AL.	
	Examiner James Derrington	Art Unit 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 November 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over LeBlanc et al (6,237,369) in view of Rees (3,885,945) taken alone or with Brown et al (5,632,795) or Moreau et al (5,655,464).

LeBlanc et al disclose the process of melting glass batches with a burner fired with fuel and oxygen. The 34 burner is operated to have a substantially laminar flow (Abstract) and the flame 30 can be adjusted to be "luminous" and impinges on the surface of glass and appears to be diffuse (See Col. 9, lines 37-38 and Fig. 4). Accordingly this burner has the claimed qualities of a flame which "diffuse, luminescent and impinges". In addition, Leblanc et al disclose that this burner 34 may be located downstream in a "conventional side fired oxygen-fuel" furnace. (See Col. 9, lines 43-67 and particularly Col. 10, lines 1-4). With this arrangement the downstream burner 34 has been found to reduce the foam (Col. 9, lines 58-61). Thus this reference shows or renders obvious the manipulative steps of claim 1. With regard to the claimed phrase "of producing flat glass", no required step for producing "flat glass" is recited and accordingly no patentable distinction is seen over the teachings of LeBlanc taken alone.

But in addition, Brown et al (Col. 4, lines 40-42) and Moreau et al (Col. 1, lines 8-9) are both cited as shown melting glass batches with oxy-fuel burners "for producing flat glass". Additionally, Brown et al (Col. 3, line ff) and Moreau et al (Col. 2, line 62 ff)

discuss the need to have reduced NOx emissions. LeBlanc et al disclose that their disclosed process and burner provides for reduced formation of NOx. Accordingly, it would have been obvious for one of ordinary skill in the art to use the method of LeBlanc et al for producing glass for the formation of flat glass products. The limitations of the dependent claims if not explicitly shown would be obvious to one of ordinary skill in the art in view of the combined teachings of the cited references.

Applicant has now added the limitation "said flame being cooler than the surface of the glass it contacts" to claims 1 and 6 and presented the arguments that LeBlanc et al does not disclose this limitation and in fact teaches away from from this newly claimed feature. In response the examiner cites the Rees reference and submits that applicant has misinterpreted the teachings of LeBlanc et al. First, it is true that LeBlanc et al teach at Col. 9, lines 46-48 that "substantially raising the surface glass temperature". However, this teaching relates to embodiments where additional mixing, reacting and/or melting is required as is clear by reading the section beginning at Col. 9, line 42. The examiner however is relying on the teaching and embodiment where foaming is encountered and attention is directed to Col. 9, line 58 ff. This section is quoted below:

> In addition, for glass melting furnaces that normally have a layer of foam on the downstream glass surface, the downstream oxygen-fuel burner 34 has been found to reduce the foam. It will be appreciated that by reducing the foam the heat transfer is increased into the body of glass material so as to reduce the thermal energy otherwise required in the glass melting furnace 10 and improving the operating efficiency of the glass melting furnace.

This passage clearly does not set forth that the temperature of the burner used to "reduce foam" is operated at a temperature higher than the glass melt as argued by applicant. The teachings of Rees (Col. 5, lines 30-44) are relied on as quoted below:

> Degassing of the molten glass within the tank 12 and furnace 11 is accomplished by maintaining the walls of the bubbles forming the froth or foam 42 sufficiently fluid to break down and release the gas to the furnace atmosphere. This is accomplished by applying heat to the molten glass surface 29 from above that surface. In one arrangement radiant heat is supplied above the molten glass delivery region 31 from hydrocarbon fuel burners 43 located in the breast walls 18 of the furnace. A temperature of 2000 °F is suitable to soften the walls of the bubbles sufficiently to insure effective degassing. In the example, two burners in each side all at the front end of the furnace provide sufficient heat to overcome heat losses tending to freeze the foam 42.

Thus Rees teach that temperatures such as 2000 °F are suitable to maintain the walls of the bubbles or foam sufficiently fluid to break down and release the gas. It is further noted that Rees explains that this lower temperature offers advantages over prior art techniques of suppressing bubbles by using termperatures higher than the glass forming temperature (note Col. 5 lines 20-29). LeBlanc disclose furnace operating temperatures such as 2300-3100 °F (Col. 6, lines 2-5). It would have been obvious for one of ordinary skill in the art to have used the downstream burner 34 of LeBlanc for the purpose of dispersing foam as discussed at Col. 9, lines 58-65 and to have operated the burner at a relatively cool temperature such as 2000 °F in view of the teachings and for the reasons disclosed by Rees.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over LeBlanc et al (6,237,369) in view of Rees (3,885,945) taken alone or with Brown et al (5,632,795) or Moreau et al (5,655,464) as applied to claims 1-6 above, and further in view of Philippe et al (5,975,886).

LeBlanc et al, Rees, Brown et al and Moreau et al have been discussed above. Philippe et al disclose an improved burner having separate oxygen and fuel outlets that produces a wide and luminous flame (See Figs 1a and 1b and Abstract). The burner (Col. 3, lines 61-65) has a wide, flat, stable, luminous flame with reduced NOx. This improved burner can be used in glass furnaces (Col. 3, line 39 ff) and it would have been obvious to use this burner in the manner shown by LeBlanc et al in order to gain the benefits of this improved burner. The limitations of the dependent claims if not explicitly shown would be obvious to one of ordinary skill in the art in view of the combined teachings of the cited references.

Schwenninger is cited as showing that a bruner flame can be used to break up glass foam (See Col. 9, lines 31-47).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Derrington whose telephone number is 703 308-3832. The examiner can normally be reached on 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 703 308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are 703 305-7718 for regular communications and 703 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0661.

JAMES DERRINGTON
PRIMARY EXAMINER
ART UNIT ~~137~~ 1731